

Abstract of the Disclosure

A portable range extender can be used to supply electrical power to an electric vehicle operable by an electric traction motor. The portable range extender includes an engine, a dynamoelectric machine coupled to the engine by a shaft, an autonomous range extender controller for controlling operations of the range extender independently of a controller for the vehicle, and circuitry associated with the engine and machine. To start operation, electrical energization is applied from the vehicle battery to the dynamoelectric machine for operation as a motor to drive the shaft. As the shaft accelerates, the rotational speed of the shaft and the temperature of the engine are sensed. When the speed and temperature obtain predetermined thresholds, fuel is supplied to the engine and ignition is activated. The engine then operates as a prime mover to drive the shaft in lieu of the machine. After a period of engine prime mover operation, the machine is activated for operation as a generator to provide an electrical current output for charging the battery or supplying energy to the traction motor. When range extender operation is to be stopped, fuel supply is cut off before ignition termination to avoid engine backfire.